REMARKS/ARGUMENTS

The claims are 5, 6 and 8-14. Claims 13 and 14 have been amended to specify that the sensor is arranged "between the drive unit and the connection region" as shown, for example, in FIGS. 2-7. In addition, claim 14 has been amended to incorporate the subject matter of claim 4. Accordingly, claim 4 has been canceled, claim 5, which previously depended on claim 4, has been amended to depend on claim 14, and claim 8 has been amended in view of the amendment to claim 14. In addition, claim 7 has been canceled. Reconsideration is expressly requested.

Claims 4-14 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite with respect to the recitation "*viewed in the conveying direction of the welding wire*" as recited in claims 13 and 14. In response, Applicants have amended claims 13 and 14 to delete this recitation, which it is respectfully submitted overcomes the Examiner's rejection under 35 U.S.C. §112, second paragraph.

Claims 10-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Noble U.S. Patent No. 1,508,713* in view of *Reinking German Publication No. DE 3120721*. Claims 4, 5, and 7-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lorentzen U.S. Patent No.5,521,355* in view of *Reinking*. Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Lorentzen* in view of *Reinking* and further in view of *Ide et al. Japanese Publication No. JP 57-134276*. The Examiner also took the position that both *Noble* and *Lorentzen* show the feature of "*the portion of the welding wire contained in said wire buffer storage being adjustable by a change of said curved course*" giving this language its broadest reasonable interpretation.

This rejection is respectfully traversed.

As set forth in claims 13 and 14 as amended, Applicants' invention provides a welding torch having a central axis including, *inter alia*, a wire buffer storage arranged within the torch body immediately after the connection region between the

hose pack and the torch body. The wire buffer storage contains a portion of the welding wire, which is adjustable by a change in the curved course followed by that portion or the wire core arranged in an end region within the torch body so as to be freely movable in the longitudinal direction, with the curved course being between the connection region and a drive unit for conveying the welding wire at different wire-conveying speeds or for a forward/reward wire conveyance.

The primary reference to *Noble* cited, *inter alia*, with respect to independent claim 13 describes an arc welding apparatus where the electrode delivery device is disassociated from the electrode feeding mechanism by a flexible guide for guiding the electrode from the electrode delivery device to the electrode feeding mechanism. The flexible guide enables the movement, especially rotation, of the electrode delivery device around the workpiece, like a boiler flue. The guide tube 7 is connected with the electrode delivery device 4, which is mounted for rotation, so that the end of the electrode 6 during such rotation may produce welds of circular character. The electrode

delivery device 4 is supported by and rotatable upon a support 11. During the movement of the electrode delivery device 4 about the support 11, there is a tendency to produce a torsion in or twisting of the electrode guide tube 7. To prevent such twisting, the guide tube is secured to the electrode delivery device 4 by a joint 22, which permits relative rotation between the electrode delivery device 4 and tube, and this joint will preferably be of the ball and socket type. The length of the flexible guide tube 7 and, therefore, the amount of the electrode 6 within the flexible guide tube 7 will always be the same.

Therefore, contrary to the Examiner's position, it is respectfully submitted that the flexible guide tube 7 according to *Noble* does not represent a wire buffer storage being able to store certain amounts of welding wire especially during conveyance of the welding wire in a reversed direction. To enable the storage of a certain amount of welding wire with the construction according to *Noble*, it would be necessary for the flexible electrode guide 7 to be able to change its length, which is definitively not the case in the *Noble* device. The flexible

electrode guide 7 is able to change only its direction, but not its length. As can be seen from page 1, lines 87 to 92 of *Noble*, the welding current may be led to the electrode delivery device by a flexible conductor braided upon the flexible electrode guide tube. If there is a flexible conductor braided upon the flexible electrode guide tube, it is not possible that the length of the electrode guide tube can be changed. Further, even if the electrode guide tube 7 of *Noble* could somehow be considered as a wire buffer storage, it is respectfully submitted that this wire buffer storage is not arranged within the torch body of the welding torch as recited in Applicants' claims.

The primary reference to *Lorentzen* cited, *inter alia*, with respect to independent claim 14 describes a welding torch assembly with a torch housing 40 being connected with a welding wire reel 22 via a torch cable 42. Flexibility of the torch cable 42 is required to reach various locations to be welded on the workpiece 34. According to the interpretation of the Examiner, the round region of the torch housing 40 before the pulling/charging means 28 of *Lorentzen* represents a wire buffer

storage like that of the construction set forth in Applicants' claims. It is respectfully submitted that this region of the welding wire is only the end of a conduit 104 proceeding through the whole torch cable 42 and ending within the torch housing 40. Only slight movements of the conduit 104 within the torch cable 42 and also within the torch housing 40 are possible.

Even if the free end of the conduit 104 within the torch housing 40 were to move a little bit, it is not possible to store a certain amount of welding wire within the torch housing 40. As can be seen from FIG. 3 of *Lorentzen*, within the torch housing 40, nearby the end of the conduit 104 there are other elements like a DC motor 30, a passage 46 for feeding cover gas, one or more trigger wires 108 as well as wires 116 to supply an electric charge from the power supply to the drive rolls 112 and 114. All those components beside the end of the conduit 104 prevent a free movement of the conduit 104 and, therefore, prevent a change of the curved course.

It is respectfully submitted that *Lorentzen* provides no indication that the welding wire 20 will change its conveyance

direction during the welding process and, therefore, makes it necessary to arrange a wire buffer storage between the pulling means 24 and pulling means 28. Even if the pulling means 24 and 28 were to rotate with different rotation speeds, the welding wire 20 would not necessarily escape within the torch housing 40, but rather could alternatively or additionally escape within the whole torch cable 42 as well as within the feeder assembly 12 between the drive rollers of the pulling means 24 and the insert 48. Such an uncontrolled change of the course of the welding wire would lead to a possible buckling of the welding wire and, therefore, to problems during the welding process.

The defects and deficiencies of the primary references to *Noble* and *Lorentzen* are nowhere remedied by the secondary reference to *Reinking* which simply describes a method for a continuous withdrawal of a wire from a coil, whereby a wire buffer is arranged between coils 8,8' and a welding apparatus 9. The wire buffer storage according to *Reinking* fails to disclose or suggest a curved course as recited in Applicants' claims, and the wire buffer of *Reinking* is not arranged within the torch body of the welding torch.

The remaining reference to *Ide et al.* cited with respect to claim 6, has been considered but is believed to be no more relevant. *Ide et al.* discloses a detector for projecting length of the welding wire. In contrast, Applicants' indicator 40 as recited in claim 6 is arranged on the end of the wire core 32 and a change in the position of the indicator 40 results in a change of the inductivity of the coil 41, into which the wire core 32 immerses along with the indicator.

Accordingly, it is respectfully submitted that claims 13 and 14 as amended, together with claims 9-12 and 5, 6 and 8 which depend directly or indirectly on claims 13 and 14 as amended, respectively, are patentable over the cited references.

In summary, claims 5, 8, 13 and 14 have been amended and claims 4 and 7 have been canceled. In view of the foregoing, it is respectfully requested that the claims be allowed and that this case be passed to issue.

Respectfully submitted,
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Amy Klein

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